



DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

[Docket No. FDA-2012-D-0322]

Action Level for Inorganic Arsenic in Apple Juice: Guidance for Industry; Availability

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice of availability.

SUMMARY: The Food and Drug Administration (FDA or we) is announcing the availability of a final guidance for industry entitled “Action Level for Inorganic Arsenic in Apple Juice.” The guidance identifies for industry an action level for inorganic arsenic in apple juice that is intended to help protect public health by reducing exposure to inorganic arsenic and is achievable with the use of current good manufacturing practices. It also describes our intended sampling and enforcement approach. Thus, the guidance finalizes the approach presented in the draft guidance issued in 2013.

DATES: The announcement of the guidance is published in the *Federal Register* on [INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].

ADDRESSES: You may submit either electronic or written comments on FDA guidances at any time as follows:

Electronic Submissions

Submit electronic comments in the following way:

- Federal eRulemaking Portal: <https://www.regulations.gov>. Follow the instructions for submitting comments. Comments submitted electronically, including attachments, to <https://www.regulations.gov> will be posted to the docket unchanged. Because your comment will be made public, you are solely responsible for ensuring that your comment does not include any confidential information that you or a third party may not wish to be posted, such as medical information, your or anyone else’s Social Security number, or

confidential business information, such as a manufacturing process. Please note that if you include your name, contact information, or other information that identifies you in the body of your comments, that information will be posted on <https://www.regulations.gov>.

- If you want to submit a comment with confidential information that you do not wish to be made available to the public, submit the comment as a written/paper submission and in the manner detailed (see “Written/Paper Submissions” and “Instructions”).

Written/Paper Submissions

Submit written/paper submissions as follows:

- Mail/Hand delivery/Courier (for written/paper submissions): Dockets Management Staff (HFA-305), Food and Drug Administration, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852.
- For written/paper comments submitted to the Dockets Management Staff, FDA will post your comment, as well as any attachments, except for information submitted, marked and identified, as confidential, if submitted as detailed in “Instructions.”

Instructions: All submissions received must include the Docket No. FDA-2012-D-0322 for “Action Level for Inorganic Arsenic in Apple Juice: Guidance for Industry.” Received comments will be placed in the docket and, except for those submitted as “Confidential Submissions,” publicly viewable at <https://www.regulations.gov> or at the Dockets Management Staff between 9 a.m. and 4 p.m., Monday through Friday, 240-402-7500.

- Confidential Submissions--To submit a comment with confidential information that you do not wish to be made publicly available, submit your comments only as a written/paper submission. You should submit two copies total. One copy will include the information you claim to be confidential with a heading or cover note that states “THIS DOCUMENT CONTAINS CONFIDENTIAL INFORMATION.” We will review this copy, including the claimed confidential information, in our consideration of comments. The second

copy, which will have the claimed confidential information redacted/blacked out, will be available for public viewing and posted on <https://www.regulations.gov>. Submit both copies to the Dockets Management Staff. If you do not wish your name and contact information to be made publicly available, you can provide this information on the cover sheet and not in the body of your comments and you must identify this information as “confidential.” Any information marked as “confidential” will not be disclosed except in accordance with 21 CFR 10.20 and other applicable disclosure law. For more information about FDA’s posting of comments to public dockets, see 80 FR 56469, September 18, 2015, or access the information at:

<https://www.govinfo.gov/content/pkg/FR-2015-09-18/pdf/2015-23389.pdf>.

Docket: For access to the docket to read background documents or the electronic and written/paper comments received, go to <https://www.regulations.gov> and insert the docket number, found in brackets in the heading of this document, into the “Search” box and follow the prompts and/or go to the Dockets Management Staff, 5630 Fishers Lane, Rm. 1061, Rockville, MD 20852, 240-402-7500.

You may submit comments on any guidance at any time (see 21 CFR 10.115(g)(5)).

Submit written requests for single copies of the guidance to the Division of Plant Products and Beverages, Office of Food Safety, Center for Food Safety and Applied Nutrition (HFS-317), Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740. Send two self-addressed adhesive labels to assist that office in processing your request. See the **SUPPLEMENTARY INFORMATION** section for electronic access to the guidance.

FOR FURTHER INFORMATION CONTACT: Eileen Abt, Center for Food Safety and Applied Nutrition (HFS-317), Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740, 240-402-1529; or Denise See, Center for Food Safety and Applied Nutrition, Office of Regulations and Policy (HFS-024), Food and Drug Administration, 5001 Campus Dr., College Park, MD 20740, 240-402-2378.

SUPPLEMENTARY INFORMATION:

I. Background

We are announcing the availability of a guidance for industry entitled “Action Level for Inorganic Arsenic in Apple Juice.” We are issuing this guidance consistent with our good guidance practices regulation (21 CFR 10.115). The guidance represents the current thinking of FDA on this topic. It does not establish any rights for any person and is not binding on FDA or the public. You can use an alternative approach if it satisfies the requirements of the applicable statutes and regulations.

In the *Federal Register* of July 15, 2013 (78 FR 42086), we announced the availability of a draft guidance for industry entitled “Arsenic in Apple Juice: Action Level.” We also announced the availability of two related scientific documents: a document entitled “Supporting Document for Action Level for Arsenic in Apple Juice” (supporting document), and a risk assessment entitled “A Quantitative Assessment of Inorganic Arsenic in Apple Juice” (the risk assessment document). We gave interested parties an opportunity to submit comments by September 13, 2013.

This guidance finalizes FDA’s action level for inorganic arsenic in apple juice of 10 micrograms per kilogram ($\mu\text{g/kg}$) or 10 parts per billion (ppb) and identifies FDA’s intended sampling and enforcement approach. The basis for the action level is set forth in the guidance document, as well as the risk assessment document originally made available on July 15, 2013, that can be accessed in the docket referenced above at <https://www.regulations.gov>. The guidance reviews data on inorganic arsenic levels in apple juice, health effects from exposure to inorganic arsenic, and the ability of manufacturers to achieve different levels of inorganic arsenic in apple juice. It also explains FDA’s rationale for identifying an action level of 10 $\mu\text{g/kg}$ or 10 ppb for inorganic arsenic in apple juice.

Arsenic is present in the environment as a naturally occurring substance or as a result of contamination from human activity. In foods, arsenic may be present as inorganic arsenic (the

primary toxic form of arsenic) or organic arsenic. Exposure to inorganic arsenic is associated with adverse human health effects, including cancer and neurodevelopmental effects. Apple juice is one source of exposure to arsenic from food, and a greater potential source of exposure for children than adults, because children's dietary patterns are often less varied than those of adults, and they consume more apple juice relative to their body weight than do adults. We expect that the 10 µg/kg or 10 ppb action level, though non-binding, will help protect public health by encouraging manufacturers to reduce levels of inorganic arsenic in apple juice and therefore reduce human exposure to inorganic arsenic. We also expect that this level is achievable by industry with the use of current good manufacturing practices. We intend to consider the action level of 10 µg/kg or 10 ppb inorganic arsenic as an important source of information for determining whether apple juice is adulterated within the meaning of section 402(a)(1) of the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 342(a)(1)).

In finalizing the guidance, we incorporated data from the supporting document and added an analysis of new data on inorganic arsenic levels in apple juice, health effects from exposure to inorganic arsenic, and the ability of manufacturers to limit inorganic arsenic in apple juice, in evaluating the appropriate action level. We also made changes to the text for clarity, including explaining the term "added" in this context and that "apple juice" includes apple cider, and we have also revised the title of the guidance to more clearly show that we are setting an action level. In addition, we added information on our understanding of arsenical pesticide use in the United States and expanded the discussion of the rationale for setting an action level based on sampling and testing results and the discussion of FDA's sampling and enforcement approach. We also incorporated new references in support of these changes and to reflect the citation of recently published FDA data and a new reference to FDA's *Closer to Zero* action plan.

We also considered all comments received during the comment period in finalizing the document. Comments on the draft guidance requested that we consider establishing action levels for other foods containing arsenic, such as other apple products, other fruit juices, and rice; that

the action level be lower than 10 ppb; that we consider additional risk management approaches; and that questioned the achievability of the action level of 10 ppb in apple juice. We did not receive new data from the comments supporting establishment of either a higher or lower action level. None of the comments caused us to change the approach set out in the draft guidance. We have clarified in the title of the final guidance that the action level of 10 ppb applies to inorganic arsenic.

Other comments suggested modifications to the risk assessment document. We note that the risk assessment report underwent peer review before we made it available to the public. (This can be found at <https://www.fda.gov/science-research/peer-review-scientific-information-and-assessments/completed-peer-reviews>.) None of these comments supported a determination that the risk assessment document needs to be modified. We will continue to monitor research developments on adverse health effects of inorganic arsenic exposure to determine if new data support changes to the guidance.

II. Paperwork Reduction Act of 1995

This final guidance contains no collection of information. Therefore, clearance by the Office of Management and Budget under the Paperwork Reduction Act of 1995 is not required.

III. Electronic Access

Persons with access to the internet may obtain the guidance at either <https://www.fda.gov/FoodGuidances>, <https://www.fda.gov/regulatory-information/search-fda-guidance-documents>, or <https://www.regulations.gov>. Use the FDA website listed in the previous sentence to find the most current version of the guidance.

Dated: May 30, 2023.

Lauren K. Roth,

Associate Commissioner for Policy.